

Claims

[c1] What is claimed is:

1.A welding-type power source comprising:

a power source housing;

an internal combustion engine driven power source arranged in the power source housing to supply electrical power;

an energy storage device in rechargeable association with the internal combustion engine driven power source and arranged to provide welding-type power for at least a given period.

[c2] 2.The welding-type power source of claim 1 further comprising a controller configured to switch an electrical configuration of the welding-type power source to deliver power from one of the internal combustion engine driven power source and the energy storage device to provide welding-type power.

[c3] 3.The welding-type power source of claim 2 wherein the controller is configured to drive a welding-type process from the energy storage device and switch the electrical configuration of the welding-type power source to drive the welding-type process from the internal combustion

engine driven power source upon detecting full engine and generator operation.

- [c4] 4.The welding-type power source of claim 3 wherein the internal combustion engine driven power source is configured to charge the energy storage device intermittently during the welding-type process.
- [c5] 5.The welding-type power source of claim 3 wherein the internal combustion engine driven power source is configured to charge the energy storage device intermittently not during the welding-type process.
- [c6] 6.The welding-type power source of claim 2 wherein the controller is configured to switch an electrical configuration of the welding-type apparatus to power a welding-type process from the energy storage device during a first operational period and from the internal combustion engine driven power source during a second operational period.
- [c7] 7.The welding-type power source of claim 6 wherein the first operational period is a startup period of the internal combustion engine driven power source and wherein the second operational period is a post-startup period of the internal combustion engine driven power source.
- [c8] 8.The welding-type power source of claim 6 wherein the

controller is configured to automatically switch the electrical configuration of the welding-type apparatus without interrupting a power supplied by the welding-type power source to drive a welding-type process.

[c9] 9.The welding-type power source of claim 1 wherein the internal combustion engine driven power source is configured to provide a charging power to the energy storage device.

[c10] 10.The welding-type power source of claim 9 wherein the internal combustion engine driven power source is configured to also provide welding-type power to drive a welding-type process.

[c11] 11.The welding-type power source of claim 9 wherein the internal combustion engine driven power source is configured to exclusively deliver the charging power to the energy storage device.

[c12] 12.The welding-type power source of claim 1 further comprising a sensor configured to detect a signal delivered by the internal combustion engine driven power source and provide feedback to a controller configured to control an electrical configuration of the welding-type power source.

[c13] 13.The welding-type power source of claim 12 wherein

the controller is configured to switch the electrical configuration of the welding-type power source to deliver power from the internal combustion engine driven power source upon receiving a signal from the sensor indicative of post-startup engine operation.

[c14] 14.The welding-type power source of claim 1 wherein the internal combustion engine driven power source is configured to deliver a charging power to the energy storage device during operation of the internal combustion engine driven power source.

[c15] 15.The welding-type power source of claim 1 wherein the energy storage device is configured to drive a welding-type process and the internal combustion engine driven power source is configured to charge the energy storage device.

[c16] 16.A method of performing a welding-type process comprising the steps of:
initiating a welding-type process from an energy storage device;
starting a fossil fuel driven engine power source; and
upon completion of starting the fossil fuel driven engine power source, switching the welding-type process from the energy storage device to the fossil fuel driven engine power source.

- [c17] 17.The method of claim 16 wherein the step of initiating the welding-type process from the energy storage device and the step of starting of the fossil fuel driven engine power source occur substantially simultaneously.
- [c18] 18.The method of claim 16 further comprising the step of charging the energy storage device from the fossil fuel driven engine power source.
- [c19] 19.The method of claim 18 wherein the step of charging the energy storage device is performed when the welding-type process is not operating.
- [c20] 20.The method of claim 16 further comprising the step of detecting a signal provided by the fossil fuel driven engine power source to determine completion of the startup process.
- [c21] 21.The method of claim 16 further comprising the steps of monitoring the welding-type process and upon detecting a break in the welding-type process, disabling the fossil fuel driven engine power source.
- [c22] 22.A welding-type apparatus comprising:
a welding-type apparatus housing;
an engine driven power source configured to supply electrical power and arranged substantially within the

welding-type apparatus housing;
an energy storage device connected to the engine driven power source and configured to supply power for a welding-type process alternately with the engine driven power source.

[c23] 23.The apparatus of claim 22 further comprising a power source controller configured to selectively drive a welding-type process from at least one of the engine driven power source and the energy storage device.

[c24] 24.The apparatus of claim 23 wherein the power source controller is configured to switch an electrical configuration of the welding-type apparatus to drive the welding-type process from the energy storage device during an initialization period and from the engine driven power source during a post-initialization period.

[c25] 25.The apparatus of claim 24 wherein the initialization period includes an engine start-up period of the engine driven power source.

[c26] 26.The apparatus of claim 24 wherein the power source controller is configured to automatically switch the electrical configuration of the welding-type apparatus without interrupting the welding-type process.

[c27] 27.The apparatus of claim 23 further comprising a sen-

sor configured to detect a signal indicative of an output delivered by the engine driven power source.

[c28] 28.The apparatus of claim 27 wherein the power source controller is configured to receive feedback from the sensor and to switch an electrical configuration of the welding-type apparatus to drive the welding-type process from the engine driven power source upon receiving feedback from the sensor.

[c29] 29.The apparatus of claim 23 wherein the engine driven power source includes an engine configured to drive a generator during operation and wherein the power source controller is configured to cease operation of the engine upon detecting a break in the welding-type process.

[c30] 30.The apparatus of claim 29 wherein the engine driven power source is configured to supply electrical power to deliver a charging power to the energy storage device during operation of the engine.

[c31] 31.The apparatus of claim 23 wherein the power source controller is configured to drive the welding-type process from the energy storage device and to switch an electrical configuration of the welding-type apparatus to drive the welding-type process from the engine driven

power source upon detecting a voltage drop of the energy storage device below a threshold.

[c32] 32.The apparatus of claim 23 wherein the welding-type process is one of a metal inert gas (MIG) welding-type process, tungsten inert gas (TIG) welding-type process, a shielded metal arc welding (SMAW) welding-type process, a plasma-cutting process, an induction heating process, and an aircraft auxiliary charging process.

[c33] 33.The apparatus of claim 22 wherein the engine driven power source is configured to charge the energy storage device during a break in the welding-type process.

[c34] 34.The apparatus of claim 22 wherein the energy storage device is configured to drive a welding-type process and the engine driven power source is configured to charge the energy storage device.

[c35] 35.The apparatus of claim 21 wherein the engine driven power source and energy storage device are configured to deliver auxiliary power.

[c36] 36.A welding-type power source comprising:
a housing;
a generator disposed in the housing and configured to deliver a welding-type power; and
an energy storage device rechargeably connected to the

generator and configured to deliver welding-type power over a given duration.

[c37] 37.The welding-type power source of claim 36 wherein the generator is further configured to deliver an auxiliary power.

[c38] 38.The welding-type power source of claim 36 wherein the generator is configured to deliver the welding-type power upon an expiration of the given duration.

[c39] 39.The welding-type power source of claim 38 wherein the given duration corresponds to a duration of a welding-type process.

[c40] 40.The welding-type power source of claim 36 wherein the generator and the energy storage device are configured to deliver welding-type power substantially simultaneously upon initiation of a welding-type process.

[c41] 41.The welding-type power source of claim 36 wherein the energy storage device is disposed within the housing.

[c42] 42.The welding-type power source of claim 36 further comprising a controller configured to switch an electrical configuration of the welding-type power source to deliver power from one of the generator and the energy

storage device to provide welding-type power.